

# OFFICE TOOL ASSEMBLY

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to an office tool assembly, and more particularly to an office tool assembly that can be hung around a person's neck or a belt and is versatile in use.

### 2. Description of Related Art

Office tools, such as hole punches or staplers, are used to attach documents. A stapler holds multiple documents together with staples, and a hole punch make holes in documents so a string or clip can extend through the holes to hold the documents together. However, conventional office tools are not convenient for a person to carry or to use outside of the office, especially a salesman or a serviceman at an off-site location. Furthermore, staples in a stapler can easily injure a person. To use and carry a conventional office tool is inconvenient and unsafe.

Therefore, US Patent No. 6,601,747, entitled as "Office Tool Assembly" is provided to solve the aforementioned problems of the office tools. The office tool assembly of the '747 patent comprises a hanging cap and a tool. The hanging cap has a top, an open end, a closed end, a through hole defined in the top and a transverse hole defined through the closed end. The tool is inserted into the open end of the hanging cap and is held in the hanging cap. The tool comprises an upper cover, a bottom cover and a main mechanism. The upper cover has a top and a protrusion formed on the top of the upper cover and engaging the through hole in the hanging cap. The bottom cover is pivotally

1 connected to the upper cover. The main mechanism is mounted between the  
2 upper cover and the bottom cover. With such an arrangement, a string can be  
3 extended through the transverse hole in the hanging cap, such that a person can  
4 hang the hanging cap with the tool around the neck with the string to  
5 conveniently and easily carry the tool to any desired place.

6 However, because the protrusion is integrally formed on the upper cover  
7 of the tool, the structure of tool assembly can be only applied to a tool with two  
8 covers pivotally combined with each other, such as a stapler or a hole puncher.  
9 The tool assembly of the '747 patent cannot be applied to a tool with two covers  
10 securely combined with each other, such as a pencil sharpener, thus, the use of  
11 the '747 patent is not versatile.

12 To overcome the shortcomings, the present invention tends to provide an  
13 office tool assembly to mitigate or obviate the aforementioned problems.

#### 14 SUMMARY OF THE INVENTION

15 The main objective of the invention is to provide an office tool assembly  
16 that can be hung around a person's neck to conveniently and safely carry the tool  
17 assembly and is versatile in use. The office tool assembly in accordance with the  
18 present invention has a hanging cap and a tool. The tool is held in the hanging  
19 cap. A protrusion is moveably mounted on the tool to engage a through hole  
20 defined in the hanging cap to keep the tool from falling out of the hanging cap. A  
21 transverse hole is defined through the hanging cap, and a string, cord, chain or  
22 the like passes through the transverse hole so the tool assembly can hang around  
23 a person's neck or any desired object, such as a belt. Carrying the office tool  
24 assembly is convenient and safe, and the use of the tool assembly is versatile.

1           Other objects, advantages and novel features of the invention will  
2   become more apparent from the following detailed description when taken in  
3   conjunction with the accompanying drawings.

#### 4   BRIEF DESCRIPTION OF THE DRAWINGS

5           Fig. 1 is a perspective view of an office tool assembly in a separated  
6   status, in accordance with the present invention;

7           Fig. 2 is an exploded perspective view of the tool of the tool assembly in  
8   Fig. 1; and

9           Fig. 3 is an operational top plan view of the office tool assembly in Fig. 1  
10   hung around a person's neck with a string.

#### 11   DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

12           With reference to Figs. 1 and 2, an office tool assembly in accordance  
13   with the present invention comprises a tool (10) and a hanging cap (20). The tool  
14   (10) is held in the hanging cap (20). The tool (10) has an upper cover (12) with a  
15   top (not numbered), a bottom cover (14) and a main mechanism (16). The main  
16   mechanism (16) is mounted between the upper cover (12) and the bottom cover  
17   (14), and the bottom cover (14) is securely connected to the upper cover (12). In  
18   an optional embodiment, the main mechanism (16) is a cutting mechanism to  
19   make the tool (10) a pencil sharpener. The upper cover (12) has a protrusion (18)  
20   moveably mounted on the top of the upper cover (12). In an optional  
21   embodiment, a recess (122) is defined in the top of the upper cover (12) and has  
22   a bottom (not numbered). The protrusion (18) is moveably received in the recess  
23   (122) and has a bottom (not numbered). A biasing member (19) is received in the

1 recess (122) and has two ends (not numbered) abutting respectively against the  
2 bottoms of the recess (122) and the protrusion (18) to make the protrusion (18)  
3 exposed from the recess (122). The protrusion (18) may have two hooks (182)  
4 extending from the bottom of the protrusion (18) and extending through two  
5 holes (not shown) defined in the bottom of the recess (122). With the  
6 engagements of the hooks (182) on the protrusion (18) and the holes in the upper  
7 cover (12), the protrusion (18) will not escape from the recess (122) in the upper  
8 cover (12).

9         The hanging cap (20) has a top, an open end (not numbered), a closed  
10 end (not numbered), a through hole (22) and a transverse hole (24). The tool (10)  
11 is inserted into the hanging cap (20) through the open end. The closed end is  
12 opposite to the open end. The through hole (22) is defined in the top of the  
13 hanging cap (20) to engage the protrusion (18) on the upper cover (12) of the tool  
14 (10). When the protrusion (18) is in the through hole (22), the tool (10) will not  
15 fall out of the hanging cap (20). The transverse hole (24) is defined through the  
16 closed end of the hanging cap (20).

17         With further reference to Fig. 3, a string (30) extends through the  
18 transverse hole (24) in the hanging cap (20) so a person can hang the hanging cap  
19 (20) with the tool (10) around the neck with the string (30). In another  
20 operational embodiment, the tool assembly in accordance with this present  
21 invention can be connected to a key chain or can be hung on a belt, a bag, a  
22 knapsack or another desired object, such that the use of the office tool assembly  
23 is versatile. Accordingly, a person can conveniently and easily carry the tool (10)

1 to any desired place and can keep his or her hands free.

2 When the person wants to use the tool (10), the person pushes the  
3 protrusion (18) downward through the through hole (22) in the hanging cap (20)  
4 to release the protrusion (18) from the through hole (22). Consequently, the tool  
5 (10) can be removed from the open end of the hanging cap (20), and the tool (10)  
6 can be used. When the tool (10) is no longer being used, the tool (10) is inserted  
7 into and held in the hanging cap (20). With the tool (10) in the hanging cap (20),  
8 the user will not be injured by the tool (10). The safety of using and carrying the  
9 office tool assembly is improved.

10 When the tool (10) is being inserted into the hanging cap (20), the  
11 protrusion is urged by a lip of the cap (20) downward into the recess (122) and  
12 the spring (19) is compressed such that the tool (10) can enter the open end of the  
13 cap (20) until the protrusion (18) aligns with the through hole (22) whereafter the  
14 resilience of the spring (19) urges the protrusion (18) into the through hole (22),  
15 whereby the tool (10) is secured in the cap (20). This design in accordance with  
16 present invention is not only applied to a tool assembly with a tool composed of  
17 two covers pivotally combined with each other, but also can be applied to a tool  
18 composed of two covers securely combined with each other. Therefore, use of  
19 the tool assembly in accordance with the present invention is versatile.

20 Even though numerous characteristics and advantages of the present  
21 invention have been set forth in the foregoing description, together with details  
22 of the structure and function of the invention, the disclosure is illustrative only,  
23 and changes may be made in detail, especially in matters of shape, size, and

- 1 arrangement of parts within the principles of the invention to the full extent
- 2 indicated by the broad general meaning of the terms in which the appended
- 3 claims are expressed.